

Tribological Composites of Detonation Carbons Base

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One in a number of efficient economical and expedient ways aimed at increasing tribological properties of the lubricants is to employ solid phase additives as oil – insoluble ultra fine powders (UFP).

Diamond and carbon contained materials of a detonation synthesis origin represent a kind of ultra-fine powders (UFP) applied as additives in diverse tribological materials. In 1980s Federal Research Centre «Altai» has worked out the original diamond soot – based additives («Desta», «Desta-M») having a drastic effect on a friction process. A wide range of the additives of ultra fine diamond and diamond – carbon compositions bases having different diamond and carbon phases ratio(s) are now developed (Krasnoyarsk, Moscow, Snezhinsk). Their efficiencies are document by the full-scale tests Acts. Due to a substantial distinction in structural characteristics of the solid additives applied, the mechanism for enhancing tribological characteristics of lubricant compositions is diverse.

This paper is devoted to the investigations in the range of the tribological characteristics of the oils having the additives on the detonation diamond- and diamond powders bases, they being realized on the SMT–I 2070. Unit according to a roll–plate friction scheme with a material loading cycle of 100 000 rotations. We have compared the effects of these solid phase additives on the bases of detonation diamonds and diamond contained carbons under the identical conditions to evaluate their effectivenesses and the results obtained allow to specify a distinctive effect of the materials investigated and then determine the most affective arrears for their practical applications.